



ATS Messaging Management Centre



# Day 1 - Session 2



ATS Messaging Management Centre



# AMC Participants

## Off-line and On-line Management

### On-line Management

Functions that shall be executed in a short time period in order to maintain the level of service required from AMHS/CIDIN/AFTN.

### Off-line Management

Functions do not need to be executed in a short time period. These relate to medium and long-term requirements .

## Off-line and On-line Management

The implementation of ATS Messaging Management included only off-line management functions in the past.

In 2015, the AMC was integrated with the emerging European directory service (EDS). The EDS functionality helps to enhance the AMC service as it provides on-line distribution of AMC operational data, including AMHS address management information, AMHS user capabilities and routing tables. However, EDS is only available to EUR/NAT region.

## AMC Functions categories :

- Implementation Support Functions (AMF-I):
- Operational Functions (AMF-O):

## AMF-I :

- AMHS MD contacts
- AMHS Implementation planning
- Inter-working Test Support
- Monitoring of AMHS documentation maintenance
- Helpdesk Functions

## AMF-O :

- Network inventory
- Routing management
- Address management
- AMHS user capabilities management
- *Statistics (not opened to External COM Centres)*
- Miscellaneous functions

## The two major groups of AMC participants :

- AMC Operators
- AMC Users

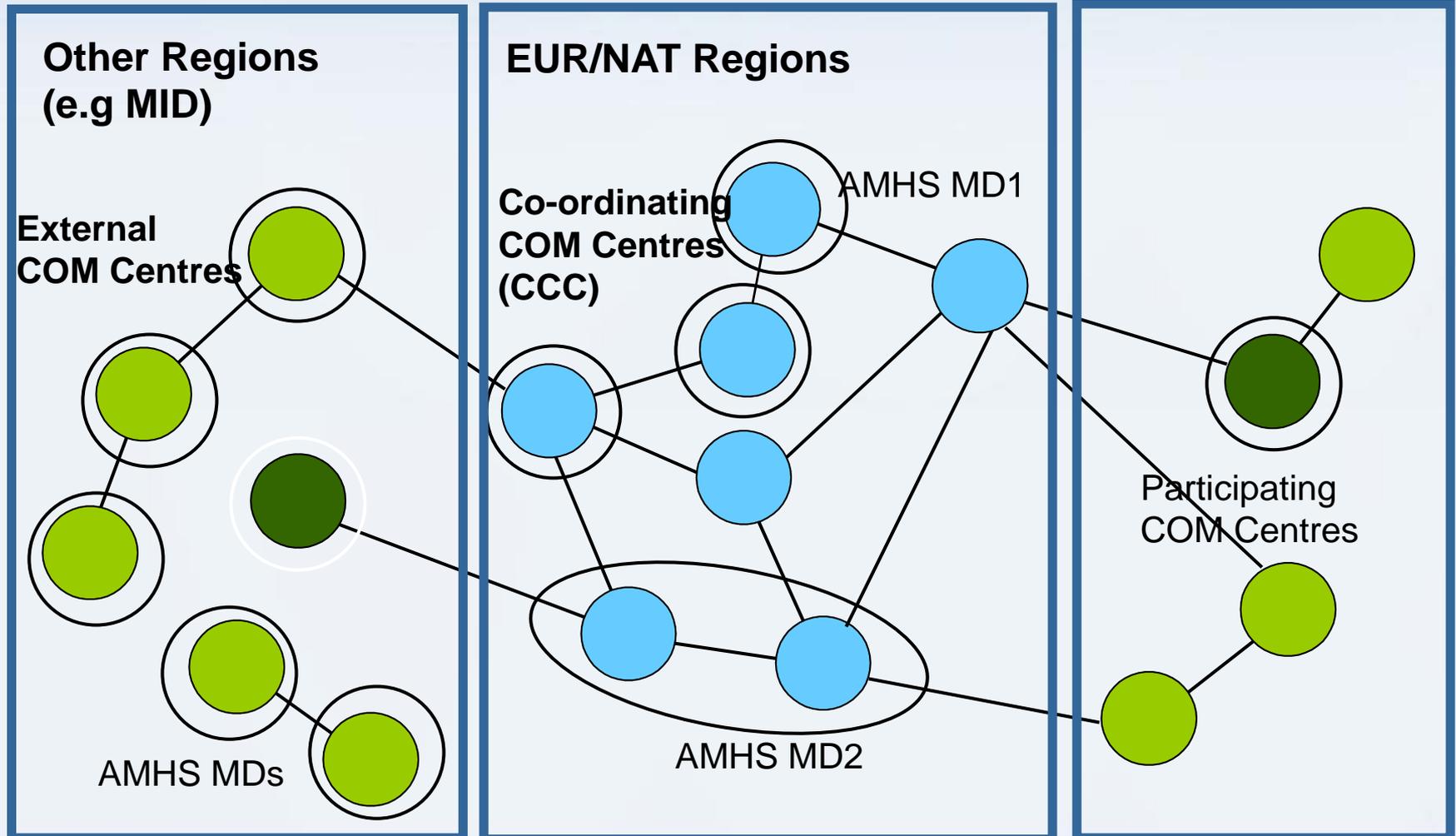
## AMC Operators :

- ❑ Group of individuals manning the AMC.
- ❑ AMC Operator functions include a high number of functions which are not visible to any other user category
- ❑ The main functions of AMC Operator are :
  1. Manages the overall operation of AMC.
  2. Collecting & analyzing & validating ATS messaging data received from all states .

## AMC Users :

- AMF-I Users
- CCC Operators ( Co-operating COM Centre)
- External COM Centres Operators
- Read-Only Users
- Participating COM Centres

# ATS Messaging Management Area



## AMF-I Users:

- is reserved for AMC users specifically involved in AMHS Off-Line Management – Implementation Support functions . (States on their way to implement AMHS)

## CCC Operators :

- is reserved for states in EUR/NAT region.
- their primary interest in AMF-O functions, even if AMHS is not yet in operation in their COM Centre;
- Always have access to AMF-I functions;

## External COM Centres Operators :

- The following criteria qualify a COM Centre outside the EUR/NAT Regions to become an External COM Centre:
  - ✓ the COM Centre is adjacent to the EUR/NAT Regions in the AFTN; or
  - ✓ the COM Centre supports (or actively plans to support) CIDIN operationally; or
  - ✓ the COM Centre supports (or actively plans to support) AMHS operationally.
  
- participate to most AMF-O functions (e.g. network inventory, address management, and routing) ( no statistics function)
- Always have access to AMF-I functions;

## Read-Only Users :

- have a limited access to some AMF-I and AMF-O functions,
- have only a viewing access to some of the AMC functions
- Only people belonging to the following personnel categories shall be entitled to become Read-Only Users:
  - ✓ ANSP personnel involved in ATS Messaging activities;
  - ✓ EUR COM Centre Operators;
  - ✓ EUROCONTROL personnel involved in ATS Messaging or AMC systems activities;
  - ✓ CNS Officers in ICAO Headquarter or Regional Offices.

## Participating COM Centres :

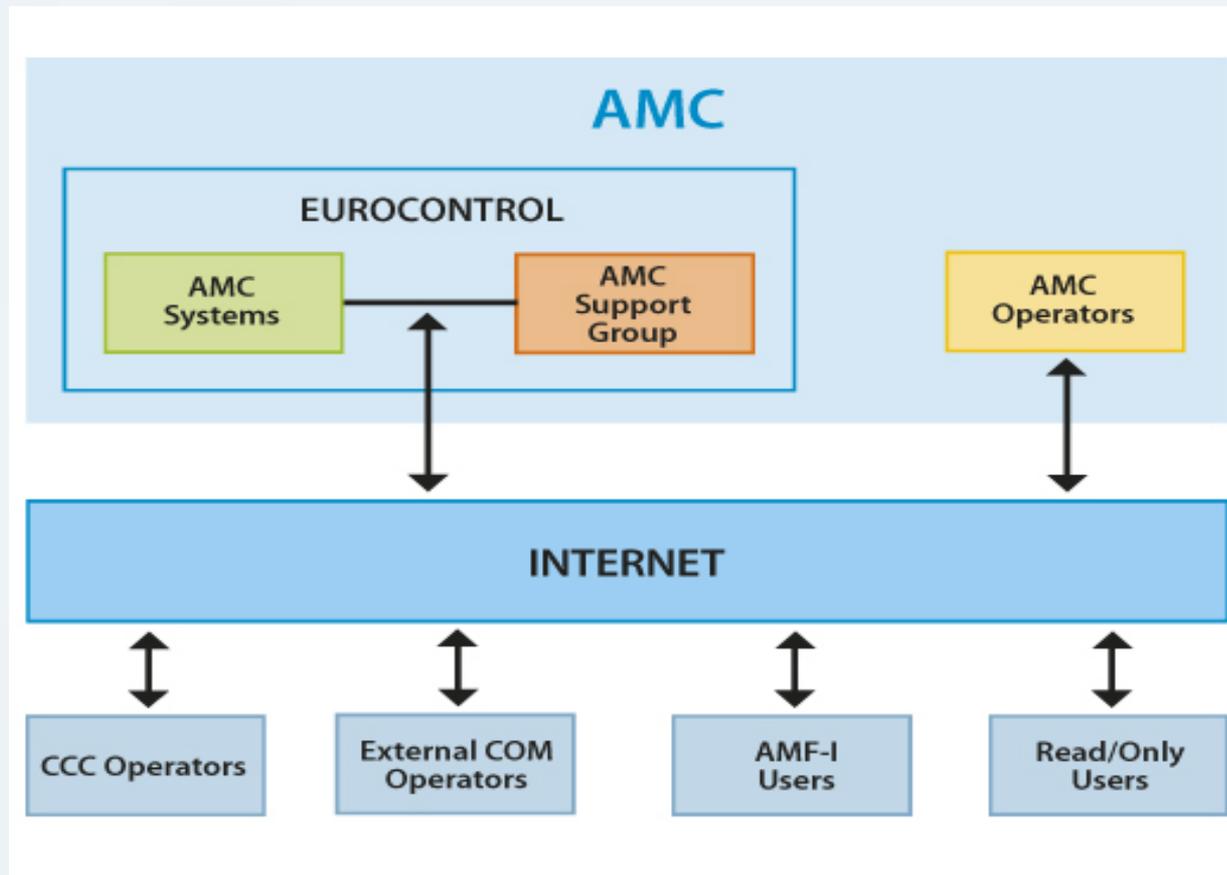
- participate informally in AMC activities.,
- would not directly input information into the AMC.
- submit information by ad-hoc means (fax, phone, e-mail, etc.) to the AMC Operator, who would enter this information in the AMC database.
- They may be located either inside or outside the EUR/NAT Regions.
- They are represented in the AMC database in the same way as External COM Centres.

## Access to AMC functions by each user category

user categories \ AMC functions	AMF-I functions	AMF-O functions	AMC Operator functions
AMC Operator	yes	yes	yes
CCC Operators	yes	yes	no
External COM Operators	yes	access to some functions	no
AMF-I Users	yes	read-only access to some functions	no
Read/Only Users	read-only access to some functions	read-only access to some functions	no
Participating COM Centres	indirect access to some functions through AMC Operator	indirect access to some functions through AMC Operator	no

*Table 2: Status of participants in ATS Messaging Management*

## AMC Participants and systems



## AMC USER ACCREDITATION PROCEDURE

- ❑ In order to be an AMC User, Use accreditation procedures **(2.5.2)** in ATS Messaging Management Manual (EUR Doc 021).

## Accreditation of External COM Operators

- ❑ Each External COM Centre shall be allowed to designate one External COM Operator + backup associated to its COM Centre.
  
- ❑ The request to register the selected person as an External COM Operator shall be submitted to EUROCONTROL according to one of the following methods:
  - by the ANSP of the COM Centre, at any time of the year. Such a request need to be validated as follows:
    - ✓ in a first stage the request is sent to the CNS Officer of the corresponding ICAO Regional Office, who ensures that the request is submitted by a due representative of the ANSP before endorsing the request;
    - ✓ the request is endorsed by the CNS Officer of the ICAO Regional Office, and then relayed to EUROCONTROL who accepts the request;
    - ✓ register to OneSky Online at <https://www.eurocontrol.int/tool/air-traffic-services-messaging-management-centre>

## Common Aspects of AMF-O Functions

Information is structured in three data areas:

- The Background Data Area
- The Operational Data Area
- The Pre-Operational Data Area

## Background Data Area

purpose	working area (CCC Operators, external COM centres, and AMC Operators)
access	restricted to own COM Centre (except for AMC Operator)
AMC Operator actions	validating Inventory, work on Routing Tables
functions	data entry and validation

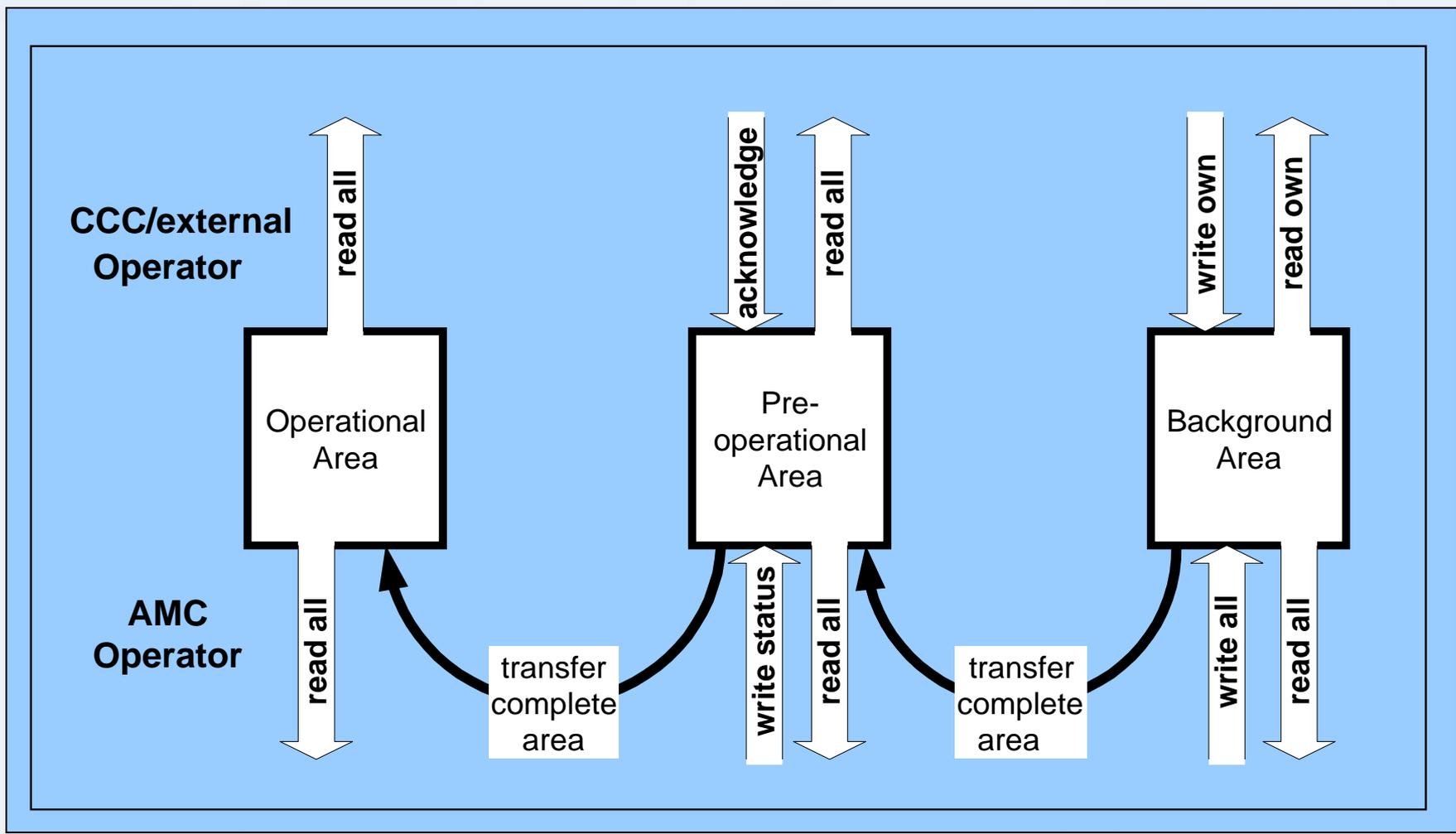
## Pre-operational Data Area

purpose	represent planned operational state
access	read (all), routing acknowledgement (restricted)
AMC Operator actions	transfers COM centre information, propose Routing Tables
functions	retrieval, routing acknowledgement

## Operational Data Area

purpose	represent operational state
access	read (all)
AMC Operator actions	copied as whole from Pre-operational
functions	retrieval

## Relation between Areas



# The Procedure Cycle

General View

Day in Cycle	Data Entry	Data Validation and Processing	ACK Phase	ACK Processing	Data Retrieval and Implementation (by CCC)
	by CCC / Ext COM / AMC	by AMC	by CCC	by AMC	Data Publication (by AMC)
1					
2					
3					
4					
5					
6					
7					
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10					
11					
12					
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28					

<b>LEGEND</b>		AMC Operator locks COM Centres		AMC Operator releases the routing matrix
		AMC Operator transfers to pre-operational area		AMC Operator moves data to operational area, unlocks COM Centres and makes official publications;
		Weekends		CCC Operators use new data for operational service

## The AMC phases

- There are 5 AMC phases in an AIRAC cycle as follows:

### 1. Data Entry Phase

**Starts day 1, ends day 7.**

- CCC & external COM Operator enters new data in the background area for network inventory, routing directory, address management, and user capabilities .

## 2. Data Validation and Processing Phase

**Starts day 8, ends day 14.**

AMC Operator Lock COM centres, create/modify routing tables, process statistic data, propose new data to the CCC/External COM Operators by moving background data into the pre-operational area.

### 3. Acknowledgement Phase

**Starts day 15, ends day 20.**

CCC/external COM Operator Check new data in the pre-operational area and acknowledge it.

## 4. Acknowledgement Processing Phase

**Starts day 21, ends day 24.**

AMC Operator Check and process all ACKs, if there are NACKs coordinate with those COM Centres, release the routing matrix.

## 5. Data Retrieval and Implementation Phase

**Starts day 25, ends day 28.**

CCC/External COM Operator retrieve new data in the preoperational area; implement address and routing data in the systems at 1100h UTC of Day 28.

AMC Operator move pre-operational data to operational area on day 28 at 11 UTC unlock the COM centres, inform the ICAO about address modifications.

# Operational functions and procedures (AMF-O)

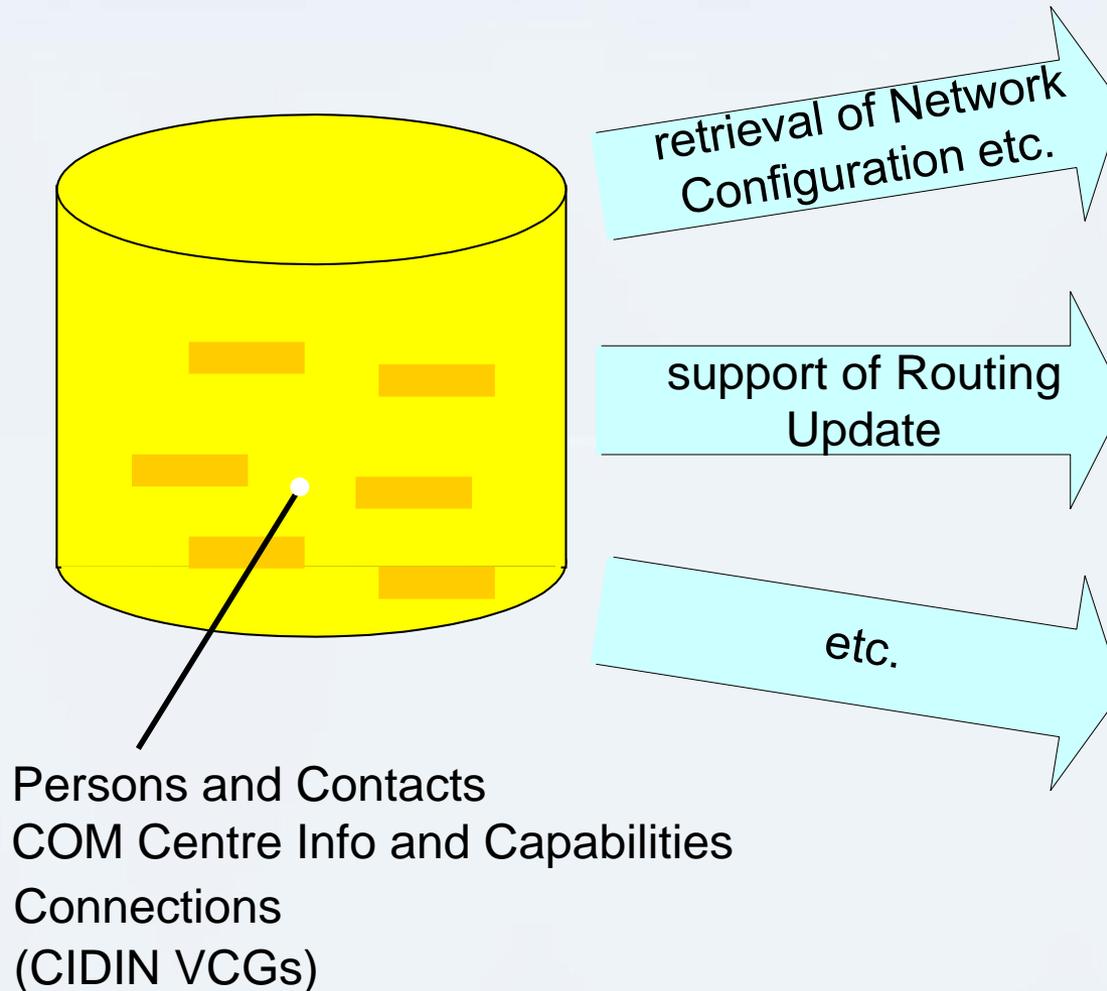
## Demonstration



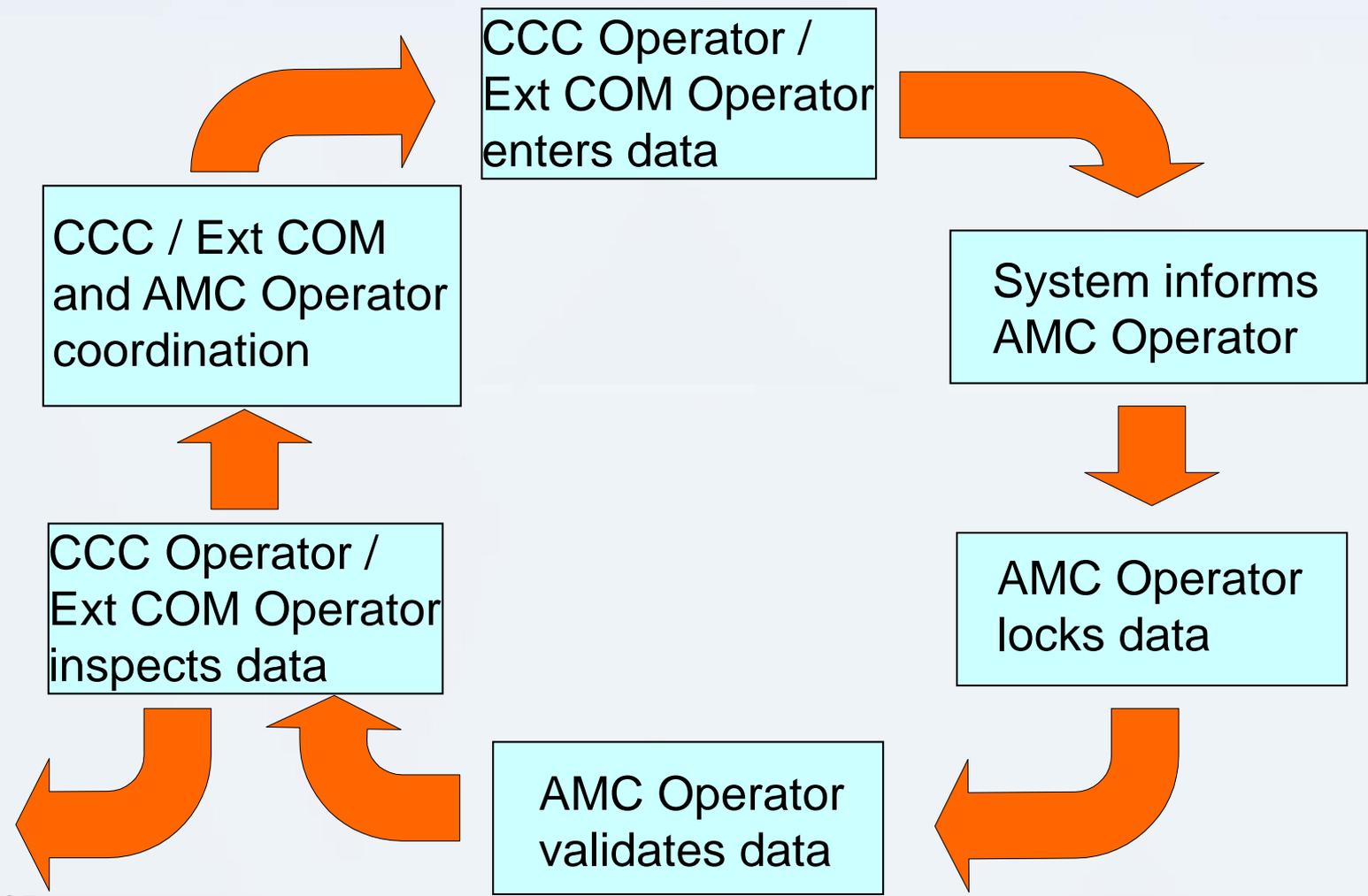
ATS Messaging Management Centre



# Network Inventory



# ATS Messaging Management Centre Inventory Update Interactions



## The Sub-functions of Network Inventory

- Persons and Contacts
- COM Centres
- AFTN/CIDIN Capabilities
- AMHS Capabilities
- VCGs
- Connections

Routing Directory

Address Management

User Capabilities Management

Statistics

Static Report

COM Charts

**View Pre-Operational Data**

Network Inventory

Routing Directory and ACK

Address Management

User Capabilities Management

**Network Inventory**
Background Area [HELP]

Persons & Contacts
Com Centres
AFTN / CIDIN Capabilities
AMHS Capabilities
VCG's
Connections

Region	COM Centre	Location	Country		
EURNAT	EDDD	FRANKFURT/MAIN INTL CI	Germany	<a href="#">HOME</a>	<a href="#">SEARCH</a>
MD Common Name		Country-Name	ADMD-Name	PRMD-Name	
GERMANY		XX	ICAO	GERMANY	

Personal Role	Firstname	Surname	Phone	E-Mail
Operator	Operator	24 H	+49 6103 707 7922	rikz@dfs.de
Technical / Oper. Supervisor	Supervisor	24 H	+496103 707 7920	rikz@dfs.de

36



## ATS Messaging Management Centre

### Network Inventory: objectives



- Persons and Contacts:  
operational contact points in COM Centres
- COM Centres:  
general information (address)  
applications (AFTN, CIDIN, AMHS, others)
- AFTN/CIDIN Capabilities:  
details of AFTN and CIDIN configuration and capabilities
- AMHS Capabilities:  
details of AMHS configuration and capabilities
- VCGs:  
list of CIDIN VCGs with adjacent COM Centres
- Connections:  
list of all connections of all types with other  
COM Centres  
(network topology)

# ATS Messaging Management Centre

## AMHS Capabilities Data Fields

Field	Comments	Values
<i>ATS Message Server frame</i>		
ATS Message Server	Derived from "applications" selected in the COM Centres function (not modifiable) If unticked the whole frame is disabled.	a checkbox: ticked = present and active unticked = not present or not active
MTA-name	The X.400 MTA-name used to declare an association, to use in trace-information, etc.	recommendation in EUR AMHS Manual : 'MTA-' followed with LI (4 letters) followed by "- " and a sequence number
Maximum Content Length	Maximum length (in bytes) of messages that the MTA is capable to accept, transfer and deliver	recommendation in EUR AMHS Manual : should be at least 2 Mbytes
Message Lifetime	Duration during which the MTA will try to transfer before assuming transfer failure and generating NDR	to be coordinated regionally. Under discussion within AFSG subgroups
Extended Encoded Information Types (EITs) in support of...	Message Encodings that the MTA is capable to transfer to accept, transfer and deliver	one checkbox (ticked = yes, unticked = no) for each body part / encoding combination specified in Doc 9705
<i>AFTN/AMHS Gateway frame</i>		
AFTN/AMHS Gateway	Derived from "applications" selected in the COM Centres function (not modifiable) If unticked the whole frame is disabled.	a checkbox: ticked = present and active unticked = not present or not active
Currently Authorized Content Length	Maximum length (in bytes) of messages that the gateway will accept to convert to AFTN	recommendation in EUR AMHS Manual : should be at least 2 Mbytes
Maximum Number of Recipients	The maximum number of recipients O/R addresses allowed in a message converted by the gateway. Messages with more recipients are rejected.	Doc 9705 requirement is 512 recipients
Converted General-Text Body Parts	General-text body parts that the gateway is capable to convert to AFTN	one checkbox (ticked = yes, unticked = no) for each body part character set specified in Doc 9705 (ISO 646 or ISO 8859-1)
Operational Status	Coming from the AMHS MD Register function (not modifiable)	'op', 'non-op', 'unknown'

# ATS Messaging Management Centre

## Protocol Capabilities

- The table shows the protocol stacks available for international AMHS connectivity
- Each stack includes application layer (P1 between MTAs), presentation, session and lower layers
- Several instances of the same stack can be present
- The table is managed as **one** parameter of the Com Centre:
  - enabled for modification or creation only when MODIFY is clicked

Protocol Capabilities					
Protocol	P-SEL	S-SEL	T-SEL	Network Address (NSAP or IP)	Active
AMHS/TP0-X.25			WAN	20601234567890	<input checked="" type="checkbox"/>
AMHS/TCP-IP			TCP	192.168.0.4	<input checked="" type="checkbox"/>

## Protocol Capabilities Data Fields

Data fields = the parameters which a remote MTA needs to correctly configure an association:

Field	Comments	Values
Protocol	Supported AMHS protocols for COM Centre to COM Centre communication. There can be various protocol stacks	'AMHS/TCP-IP' 'AMHS/ATN-TP4' 'AMHS/TP0-X.25'
P-SEL	Presentation selector for OSI Upper Layer stack. A characteristic of the MTA-to-MTA	assigned by COM Centre 4 characters maximum
S-SEL	Session selector for OSI Upper Layer stack	assigned by COM Centre 16 characters maximum
T-SEL	Transport selector for OSI Upper Layer stack	assigned by COM Centre 32 characters maximum
Network Address (NSAP or IP)	The IP address or ATN NSAP allocated to the considered protocol stack in the MTA.	assigned by COM Centre
Active	indicates the current operational status of the protocol stack	a checkbox: ticked = active unticked = present but not yet active

## Connections

- need to represent the network topology at “messaging level”
- in summary three main connection categories:
  - AFTN circuits (conventional or X.25)
  - CIDIN (PVC or SVC)
  - AMHS connections
- an AMHS connection = a X.400 P1 association between two MTAs over a lower layer network infrastructure
- two tables:
  - Existing connections
  - Planned Connections – includes Events (creation, modification, etc.)
- existing connections form the basis for:
  - routing tables
  - COM Charts
  - ANP FASID Report produced by EANPG/AFSG for ICAO

# ATS Messaging Management Centre

## Connections Data Fields

Field	Comments	Values
Remote COM	The "other end" of the connection	a COM Centre location indicator described in the AMC (4 letters)
Protocol	protocol used over the connection	can be an AMHS protocol stack, 'CIDIN PVC' or 'CIDIN SVC', 'Conv. AFTN' or 'AFTN/X.25', etc.
Network Address	The network address of the <b>REMOTE</b> Com Centre used for the connection	entered using the remote Centre's inventory information
Link Type	an indication of the physical connectivity used for the connection	free text, can be the name of the operational lower layers network (e.g. REDAN+RAPNET, CFMU, etc.)
Capacity	the capacity of the link or circuit (if fixed end-to-end) or of the network access	value in kbits/s
Circuit type (in pop-up window only)	the type of circuit supporting the connection, based on a standard ICAO classification	'L' (Landline), 'M' (Multiplexer), 'N' (Network), 'R' (Radio), 'S' (Satellite)
Supplier	an indication of the supplier of physical connectivity used for the connection	free text, can be a generic name such as 'telco', or specific 'SITA', 'PENS', etc.
Active	indicates the current operational status of the connection	a checkbox: ticked = active unticked = present but not yet active (should not happen in "existing connections")

# Network Inventory

## Demonstration

# Implementation support functions (AMF-I)

## Demonstration